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## Background

- The long head of the biceps (LHB) stabilizes the shoulder by reducing anteroposterior and superior inferior translation of the humeral head in the glenoid fossa.
- A tear of the LHB most commonly occurs when the biceps is suddenly loaded against flexion and supination of the elbow.
- Surgical repair of the LHB has seen 94% satisfaction rates, but with complications.
- Fifty-six percent of patients who initially chose conservative methods ultimately choose surgery.
- There is a currently a lack of evidence supporting conservative management of a complete rupture of the LHB.

## Purpose

The purpose of this case study was to assess conservative management of a complete rupture of the long head of the biceps over a six-week period.

## Case Description

- 51-year-old male with a complete tear of the LHB.
- Tried to brace a fall by grabbing ahol of his truck, tearing the LHB.
- Demanding job as an electrician which required a lot of heavy lifting, overhead work, and was relatively strenuous.
- Waited two and a half months to see a doctor after the initial injury.
- Due to minimal physical restriction and the chronic nature of the tear, the surgeon recommended physical therapy.

## Intervention

### Manual Therapy

- **Muscle Energy Technique (MET) – Internal Rotation Soft tissue manipulation**

### Therapeutic Exercise

- **Internal rotation stretch**
- **Scapular strengthening**
- **Rotator cuff strengthening**

### Home Exercise Program

- **Sleeper stretch**
- **Internal and External strengthening with theraband**

## Timeline

<table>
<thead>
<tr>
<th>2 1/2 mo prior to IE</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Evaluation and Treatment #1</strong></td>
<td><strong>Treatment #2</strong></td>
<td><strong>Treatment #3</strong></td>
<td><strong>Treatment #4</strong></td>
<td><strong>Treatment #5</strong></td>
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<tr>
<td>- QuickDASH: 20% impaired, Restricted ROM and MMT</td>
<td>MET, Manual Therapy, Progress Therapeutic Exercise</td>
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<tr>
<td><strong>Discharge</strong></td>
<td><strong>Improvement in ROM &amp; VAS QuickDASH:</strong></td>
<td><strong>9%</strong></td>
<td><strong>20% impaired to 9% impaired</strong></td>
<td><strong>Decreased</strong></td>
<td><strong>7/10 to 2/10</strong></td>
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</tbody>
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**MET = muscle energy technique, ROM = range of motion, VAS = visual analog scale**

## Outcomes

<table>
<thead>
<tr>
<th><strong>Test</strong></th>
<th><strong>Initial Evaluation to Discharge</strong></th>
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</thead>
<tbody>
<tr>
<td>AROM forward flexion</td>
<td>153° to 168°</td>
</tr>
<tr>
<td>AROM Internal Rotation</td>
<td>38° to 51°</td>
</tr>
<tr>
<td>QuickDASH</td>
<td><strong>Decreased</strong></td>
</tr>
<tr>
<td>Tenderness in infraspinatus</td>
<td>Decreased</td>
</tr>
<tr>
<td>Visual Analog Scale after a day at work</td>
<td>7/10 to 2/10</td>
</tr>
</tbody>
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## Conclusion

Conservative management of a rupture of the long head of the biceps was found to be beneficial for this patient. The improvement was demonstrated by the patient’s increase in range of motion, decrease in tenderness with palpation, and decrease in impairment measured by the QuickDASH score.

## References